

# **Layer-by-layer approach to the treatments of melanin increased pigmented diseases**

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Although there is some controversy, EBD treatment such as laser and intense pulse light (IPL) is the basic armamentarium for treating skin pigmentation diseases regarding cosmetic purposes. Lasers or IPL rays transmitted to skin tissues are essentially subjected to produce laser-tissue interaction. Different physical responses appear depending on each wavelength, pulse width, and irradiation method. The effective methods should be set up to achieve treatment goals by interpreting and utilizing photophysical properties well. Melanin produced from melanocytes accumulates in surrounding keratinocytes, which is responsible for UV protection, but there are various cases in which excessive pigments are accumulated over the epidermal layer due to environmental factors, genetic factors, and past skin damage or inflammatory reactions. It should be analyzed carefully before starting treatment procedures.

In most cases, excessive melanin accumulation in the epidermis is accompanied, but many acquired pigmented diseases are accompanied by damage to the basal cell membrane, formation of pedunculated melanocytes, and melanin dropping or melanophages in the dermis also can be seen. On the other hand, like seborrheic keratosis, excessive proliferation of epidermal cells shows verrucous proliferation over the skin surface may result in extensive acanthosis, and a large amount of melanin could be accumulated in it. In the case of pigmented diseases that eccentrically appear to the outer layer of the epidermis, treatment is not difficult, but in the case of pigmented diseases that appear just above the base cell layer or dermo-epidermal junction area, treatment should be taken not to cause vascular damage and melanogenesis, or should not leave unnecessary excessive thermal damage after treatment. In addition, a treatment process to improve the photoaged lesion of the upper dermis should be included to get better results. From this point of view, I would like to discuss with my colleagues to find an efficient approach for the common but sometimes tricky pigmented diseases.